

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/38130

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F04B 53/12

US CL : 417/548

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 417/548,545,554,555.1,555.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 724,569 A (GRAGERT) 07 April 1903 (07.04.1903), Figure 1 and 2.	1-8, 11-13, 15-19, and 21-27
X — Y	US 1,520,621 A (WATKINS) 29 May 1924 (29.05.1924), Figure 1.	1-5, 11, 12, 15-17, and 23-26
X — Y	US 1,012,917 A (ROCKOLA) 26 December 1911 (26.12.1911), Figure 2.	1-31
X — Y	US 909,676 A (ROCKOLA) 12 January 1909 (12.12.1909), Figure 2.	1-31



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

16 March 2005 (16.03.2005)

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05 APR 2005

Name and mailing address of the ISA/US

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Commissioner for Patents

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 372,888 A (BEAN) 08 November 1887 (08.11.1887), Figure 6.	1-9, 11, 12, 14-28, and 31
X — Y	US 767,092 A (WALKER et al.) 09 August 1904 (09.08.1904), Figure 1.	1-9, 11, 12, 14-28, and 31
X — Y	US 205,699 A (SWAN) 02 July 1878 (02.07.1878), Figures 1 and 2.	1-9, 11, 12, 14-28, and 31
Y	US 6,622,612 B2 (NOTZON) 23 September 2003 (23.09.2003), Figure 1, column 2 lines 43-61.	1-31
Y	US 6,341,782 B1 (BTSION) 29 January 2002 (09.01.2002), Figure 1, 5, 6a, 6b, 7, column 6 lines 24-41.	1-31
A	US 2,633,808 A (WEBBER) 07 April 1953 (07.04.1953), Figures 1-3.	1-31